

DESCRIPTION

Q-10 is a clear, colorless and odorless liquid germicide designed for use in hospitals, nursing homes, hotels, schools, homes, athletic/recreational facilities/tanning spas, dairies, food processing plants, food service establishments, restaurants, bars, animal quarters, and kennels where disinfection, sanitization and deodorization is of prime importance. When used as directed, **Q-10** is formulated to disinfect hard non-porous, inanimate environmental surfaces: floors, walls, metal surfaces, stainless steel surfaces, glazed porcelain, glazed ceramic tile, plastic surfaces, artificial turf surfaces, bathrooms, shower stalls, bathtubs, cabinets, tables, chairs, tanning beds and telephones. **Q-10** deodorizes those areas, which generally are hard to keep fresh smelling, such as garbage storage areas, empty garbage bins and cans, pet areas and any other areas, which are prone to odors caused by microorganisms. **Q-10** is not for use on critical and semi-critical device surfaces.

SPECIAL INFORMATION

U.S. E.P.A. Reg. No. 1839-86-1791

U.S. E.P.A. Est. No. 1791-CN-01

Guarantee

Alkyl (60% C ₁₄ , 30% C ₁₆ , 5% C ₁₂ , 5% C ₁₈) dimethyl benzyl ammonium chlorides	5.0%
Alkyl (68% C ₁₂ , 32% C ₁₄) dimethyl ethylbenzyl ammonium chlorides	5.0%

DIRECTIONS

Disinfection of hospitals, food processing establishments, dairies, restaurants and bars:

Thoroughly pre-clean all surfaces with a M-chem cleaning product and rinse with water. Dilute 3.5 oz of **Q-10** per 5 gallons (1:180) of water. Apply this 550 ppm solution with a mop, cloth, sponge or trigger sprayer so as to wet all surfaces thoroughly. Allow to remain wet for a period of 10 minutes, then remove all excess liquid. Prepare a fresh solution for each use.

Sanitization of previously cleaned, non-porous food contact surfaces:

Remove all gross food particles and soil from areas which are to be sanitized with a M-chem cleaning product, pre-flush, pre-soak or pre-scrape. Rinse with a potable water rinse then sanitize using a 200 ppm active quaternary solution by adding 1 oz of **Q-10** per 4 gallons (1:510) of water, 2.5 oz. to 10 gallons of water or 5 oz. to 20 gallons of water.

To sanitize immobile items such as tanks, chopping blocks and counter top:

Flood the area with 200 ppm active quaternary solution for at least 60 seconds making sure to wet all surfaces completely. Remove, drain the use solution from the surface and air dry. Prepare a fresh solution daily or more frequently as soil is apparent.

To sanitize mobile items such as drinking glasses and eating utensils:

Immerse in a 200 ppm active quaternary solution for at least 60 seconds making sure to immerse completely. Remove, drain the used solution from the surface and air dry. Prepare a fresh solution daily or more frequently as soil is apparent. When used for sanitization of previously cleaned food equipment or food contact items, limit the active quaternary to 200 ppm. NO POTABLE WATER RINSE IS REQUIRED. **Q-10** is an effective sanitizer when diluted in water up to 750 ppm hardness (CaCO₃).

Deodorization of garbage storage areas, empty garbage bins and cans and pet areas:

Thoroughly pre-clean all surfaces with an M-chem cleaning product and rinse with water. Dilute 3 oz of **Q-10** per 5 gallons (1:210) of water. Apply this 470 ppm solution with a mop, cloth, sponge or trigger sprayer so as to wet all surfaces thoroughly. Allow to remain wet for a period of 10 minutes, then remove all excess liquid. Prepare a fresh solution for each use.

Q-10 KILLS HIV-1, HBV AND HCV ON PRE-CLEANED ENVIRONMENTAL SURFACES/ OBJECTS PREVIOUSLY SOILED WITH BLOOD/BODY FLUIDS in health care setting (hospitals, nursing homes) or other settings in which there is an expected likelihood of soiling of inanimate surface/objects with blood or body fluids, and in which the surfaces/objects likely to be soiled with blood or body fluids can be associated with the potential for transmission of Human Immunodeficiency Virus Type 1 (HIV-1) (associated with AIDS), Hepatitis B virus (HBV) and Hepatitis C virus (HCV).

Special Instructions for Cleaning and Decontamination against HIV-1, HBV and HCV on Surfaces/ Objects Soiled with Blood or Body Fluids:

Personal Protection: When handling items soiled with blood or body fluids use disposable latex gloves, gowns, masks, or eye coverings.

Cleaning Procedures: Blood or body fluids must be thoroughly cleaned from surfaces and objects before application of this product.

Disposal of Infectious Materials: Blood and other body fluids should be autoclaved and disposed of according to local regulations for infectious waste disposal.

Efficacy tests have demonstrated that this product is an effective Bactericide and Virucide in the presence of organic soil (5% blood serum).

EFFICACY DATA

DISINFECTION DATA:

Test Method: AOAC Use Dilution

Test Conditions: 5% serum, 10 minute contact time, stainless steel carrier substrates, 20°C exposure temperature

Results:

<u>Test Organism</u>	<u>Dilution</u>	<u>Sample</u>	<u>NO. OF CARRIERS</u>	
			<u>Exposed</u>	<u>Positive</u>
<i>Staphylococcus aureus</i> (ATCC 6538)	3 ounces/	A	60	0
	5 gallons	B	60	0
<i>Salmonella enterica</i> (ATCC 10708)	3 ounces/	A	60	0
	5 gallons	B	60	0
<i>Listeria monocytogenes</i> (ATCC 35152)	3 ounces/	A	10	0
	5 gallons	B	10	0
<i>Yersinia enterocolitica</i> (ATCC 23715)	3 ounces/	A	10	0
	5 gallons	B	10	0
<i>Pseudomonas aeruginosa</i> (ATCC 15442)	3.5 ounces/	A	60	0
	5 gallons	B	60	0
<i>Staphylococcus aureus</i> (Vancomycin intermediate resistant)(VISA)(HIP-5836)	3.5 ounces/	A	10	0
	5 gallons	B	10	0
<i>Xanthomonas axonopodis</i> (pathovar citri)(Citrus Canker) (USDA Permit No. 46190)	2.67 ounces/	A	10	0
	1gallon	B	10	0

EFFICACY DATA

DISINFECTION DATA continued:

Conclusion:

Under the conditions of these investigations, **Q-10** demonstrated disinfectant activity against *Staphylococcus aureus*, *Salmonella enterica*, *Listeria monocytogenes*, *Yersinia enterocolitica*, *Pseudomonas aeruginosa*, *Staphylococcus aureus* (Vancomycin intermediate resistant)(VISA), and *Xanthomonas axonopodis* (pathovar *citri*) (Citrus Canker) according to the criteria established by the US Environmental Protection Agency for registration and labeling of a disinfectant product as a bactericide.

SANITIZATION DATA:

Test Method: AOAC Germicidal and Detergent Sanitizing Action of Disinfectants

Test Conditions: Synthetic hard water as 650 ppm hardness (as CaCO₃),
200 ppm active quaternary, (public eating establishments and dairies)
200-400 ppm active quaternary (food processing equipment/utensils)
1-2 ounces/4 gallon dilution

<u>Test Organism</u>	<u>Sample</u>	<u>TOTAL BACTERIAL COUNTS/ % KILL VS. EXPOSURE TIME</u>				<u>Initial Inoculum Control Count</u>
		<u>30 SECONDS</u>		<u>60 SECONDS</u>		
		<u>TBC*</u>	<u>% Kill</u>	<u>TBC*</u>	<u>% Kill</u>	
<i>Staphylococcus aureus</i> (ATCC 6538)	A	970	99.999	105	99.999	7.90 x 10 ⁷
	B	1285	99.999	205	99.999	9.20 x 10 ⁷
	C	1145	99.999	130	99.999	9.30 x 10 ⁷
<i>Escherichia coli</i> (ATCC 11229)	A	1125	99.999	50	99.999	1.00 x 10⁸
	B	1075	99.999	95	99.999	9.30 x 10⁷
	C	835	99.999	75	99.999	8.10 x 10⁷
<i>Campylobacter jejuni</i> (ATCC 29428)	A	790	99.999	410	99.999	8.6 x 10 ⁷
	B	780	99.999	470	99.999	8.6 x 10 ⁷
<i>Escherichia coli</i> 0157:H7 (ATCC 43895)	A	1220	99.999	110	99.999	9.20 x 10⁷
	B	1000	99.999	125	99.999	9.20 x 10⁷
<i>Listeria monocytogenes</i> (ATCC 35152)	A	<10	>99.999	<10	>99.999	7.78 x 10 ⁸
	B	<10	>99.999	<10	>99.999	7.78 x 10 ⁸
Methicillin resistant <i>Staphylococcus aureus</i> (ATCC 33592)	A	950	99.999	<10	>99.999	1.0 x 10⁸
	B	970	99.999	<10	>99.999	1.0 x 10⁸
<i>Salmonella typhi</i> (ATCC 6539)	A	<10	99.999	<10	>99.999	1.4 x 10 ⁸
	B	<10	99.999	<10	>99.999	1.4 x 10 ⁸
<i>Shigella sonnei</i> (ATCC 11060)	A	680	99.999	<10	>99.999	9.3 x 10⁷
	B	4500	99.999	<10	>99.999	9.3 x 10⁷
Vancomycin resistant <i>Enterococcus faecalis</i> (ATCC 23715)	A	<10	>99.999	<10	>99.999	1.2 x 10 ⁸
	B	<10	>99.999	<10	>99.999	1.2 x 10 ⁸
<i>Vibrio cholera</i> (ATCC 14035)	A	<10	>99.999	<10	>99.999	8.3 x 10⁷
	B	<10	>99.999	<10	>99.999	8.3 x 10⁷
<i>Yersinia enterocolitica</i> (ATCC 23715)	A	108	99.999	<10	99.999	1.7 x 10 ⁸
	B	1300	99.999	263	99.999	5.9 x 10 ⁸

*TBC = Total Bacterial Count

EFFICACY DATA

SANITIZATION DATA continued:

Conclusion:

Under the conditions of these investigations, **Q-10** demonstrated sanitizing activity against *Staphylococcus aureus*, *Escherichia coli*, *Escherichia coli* 0157:H7, *Campylobacter jejuni*, Methicillin resistant *Staphylococcus aureus*, *Shigella sonnei*, Vancomycin resistant *Enterococcus faecalis*, *Vibrio cholera*, *Listeria monocytogenes*, *Salmonella typhi*, and *Yersinia enterocolitica* according to the criteria established by the US Environmental Protection Agency for registration and labeling of a disinfectant product as a sanitizer.

VIRUCIDAL DATA:

Test Methods:

***U.S. E.P.A. Pesticide Assessment Guidelines, Subdivision G: Product Performance, Section 91-30, 1982, pp. 72-76.**

****Protocols for Testing the Efficacy of Disinfectants against Hepatitis B Virus (HBV) (EPA, Federal Register, Vol.65, No. 166, 8/25/2000, p. 51828).**

*****Protocol for Testing Disinfectants against Hepatitis C Virus using Bovine Viral Diarrhea Virus as approved by the U.S. EPA on August 15, 2002.**

~Virucidal Assay (EPA, Federal Register 10, No.123, 6/25/75, p.26836).

Test Conditions:

10 minute contact time, 3.5 oz/5 US gallon dilution, sterile glass petri dish substrates, 18.5-25°C exposure temperature, tested in the presence of serum.

Results:

<u>Test Organism</u>	<u>Sample</u>		<u>Titer Reduction</u>	
**Hepatitis B Virus (HBV) (Duck Hepatitis B Virus-DHBV)	A	B	4.68 log	4.68 log
***Hepatitis C Virus (HCV) (Bovine Viral Diarrhea Virus-BVDV)	A	B	5.93 log	5.93 log
~Herpes Simplex Type 1 (Sabin)	A	B	4.0 log	4.0 log
*Human Immunodeficiency Virus, HTLV-III _{RF} , strain of HIV-1 (associated with AIDS)	A	B	>= 3.5 log	>= 3.5 log
~Adenovirus Type 5	A	B	>= 3.0 log	>= 3.3 log
~Influenza A ₂ (Japan 305/57)	A	B	7.5 log	7.5 log
~Vaccinia (Wyeth)	A	B	3.5 log	3.5 log
*Avian Influenza A/Turkey/Wisconsin (ATCC VR-798)	A	B	>= 5.5 log	>= 5.5 log

EFFICACY DATA

VIRUCIDAL DATA continued:

Results:

Test Organism	Sample		Titer Reduction (after 10 min. contact)	
			A	B
*Laryngotracheitis (LT-IVAX)	A	B	4.75 log	>=4.75 log
*Newcastle Disease virus (strain H.J. Roakin, 1946)	A	B	>= 5.5 log	>= 5.5 log
***Bovine Viral Diarrhea Virus (BVDV)	A	B	5.93 log	5.93 log
*Human Coronavirus (ATCC VR-740, strain 229E)	A	B	>=4.25 log	>= 4.25 log
Porcine Respiratory & Reproductive Syndrome Virus (PRRSV) (Strain NVSL)	A	B	>=5.75 log	>=5.75 log
*SARS associated Coronavirus (ZeptMetrix)	A	B	4.03 log	4.03 log

Conclusion:

Under the conditions of this investigation, **Q-10**, was virucidal for Hepatitis B Virus (HBV), Hepatitis C Virus (HCV), Herpes Simplex Type 1 (Sabin), Human Immunodeficiency Virus (HIV-1), Influenza A₂ (Japan 305/57), Vaccinia (Wyeth), Adenovirus Type 5, Avian Influenza A/Turkey/Wisconsin, Laryngotracheitis, Bovine viral Diarrhea Virus (BVDV), Porcine Respiratory & Reproductive Syndrome Virus (PRRSV), SARS associated Coronavirus and Newcastle Disease virus according to criteria established by the U.S. Environmental Protection Agency for registration and labeling of a disinfectant product as a virucide.



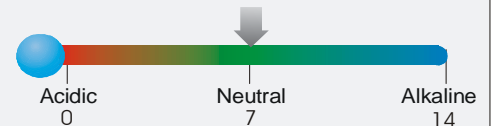
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LABEL CODES

Labels are color coded to identify the material type

- Yellow..Chlorinated
- Red.....Acidic
- Green...Neutral
- Blue.....Alkaline

PH LEVEL



MATERIAL SAFETY DATA SHEET

SECTION 1 – PRODUCT/MANUFACTURER'S IDENTITY

Product Name: **Q-10**

WHMIS CODE: N/A

Product Use: *Quat disinfectant/sanitizer.*
US EPA # 1839-86-1791

Proper Shipping Name: N/A

Hazard Class: N/A

UN Number: N/A

HMIS

3	Health
1	Flammability
0	Reactivity
B	Personal

A=Goggles, B=Goggles & Gloves
 C=Goggles, Gloves and Apron

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ABBREVIATION KEY: N/A=Not Applicable, N/E=Not Established, N/D=Not Determined, > =Greater Than

SECTION 2 – HAZARDOUS INGREDIENTS INFORMATION

INGREDIENT	CAS NO.	RANGE %	PEL	TLV
ALKYL DIMETHYL BENZYL AMMONIUM CHLORIDE	68391-01-5	5.0	N/D	N/D
LD50 (oral rat)	N/D			
LD50 (dermal)	N/D			
LC50	N/D			
Alkyl DIMETHYL ETHYLBENZYL AMMONIUM CHLORIDE	68956-79-6	5.0	N/D	N/D
LD50 (oral rat)	N/D mg/kg			
LD50 (dermal Rabbit)	N/D mg/kg			
LD50	N/D			

SECTION 3 – PHYSICAL DATA

Color and Odor: Clear, mild odor. **Boiling Point:** N/D **Vapor Pressure (mm HG):** N/D **pH:** 7.0 – 8.0
Physical State: Liquid. **Melting Point:** N/A **Vapor Density:** N/D **Specific Gravity:** 0.993 @ 20°C
Coef. Water/Oil Dist: Greater than 1.0 **Evaporation Rate:** N/D **Solubility in Water:** Soluble **Odor Threshold:** No Data

SECTION 4 – FIRE AND EXPLOSION HAZARD DATA

Flash Point and Method: > 93.3°C (PMCC) **Sensitivity to Mechanical Impact:** None. **Extinguishing Media:** Dry chemical, foam, carbon dioxide, water fog.
Flammable Limits: None known. **Sensitivity to Static Discharge:** None. **Auto ignition Temperature:** None known.
Conditions of Flammability: None.
Unusual Fire and Explosion Hazards: Vapors may form explosive mixture with air.
Hazardous Combustion Products: Irritating and toxic gases or fumes may be released during a fire.
Special Fire Fighting: Firefighters should wear full fire-fighting turn-out gear (full Bunker gear) including NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

SECTION 5 – REACTIVITY DATA

Chemical Stability: Stable under normal storage conditions.
Hazardous Polymerization: Will not Occur.
Incompatibility (material to avoid): Strong oxidizing and reducing agents, acids.
Hazardous Decomposition Products: Fumes of hydrogen chloride, amines, and other oxides of carbon and nitrogen.

SECTION 6 – TOXICOLOGICAL DATA

Exposure Limits: See Section 2 under Hazardous Ingredient. **Routes of Entry:** Skin, eyes, inhalation.
Irritancy of Product: Corrosive to skin, eyes and respiratory system. **Carcinogenicity:** None known.
Sensitization: None known. **Mutagenicity:** None known.
Name of Toxicological Synergistic Product: None known. **Reproductive Toxicity:** None known.
Teratogenicity: None known.
Effects of Chronic Exposure: Prolonged or repeated exposure may cause skin irritation or dermatitis, respiratory disorder.
Effects of Acute Exposure to Product: Product exposure may irritate or burn skin and eyes. Inhaling vapors or mists may irritate mucous membranes. Prolonged inhalation exposure may cause headaches, nausea, etc. Ingestion may cause gastro-intestinal and abdominal discomfort.

SECTION 7 – PREVENTATIVE AND CONTROL MEASURES

Respiratory Protection: Normally not required. However, if product is misted or sprayed, use a NIOSH/MSHA approved mist and organic vapor respirator.
Ventilation: Good general ventilation or local exhaust ventilation for spraying and misting in confined areas.
Protective Gloves: Natural or butyl rubber, nitrile or neoprene gloves.
Eye Protection: Chemical goggles, safety goggles or face shield.
Protective Clothing and Equipment: Long sleeve coveralls. Eye wash recommended in the immediate work area.
Storage and Handling Procedures: Use good industrial hygiene. Do not get in eyes. Avoid contact with skin and clothing. Avoid breathing sprays or mists. Store in a cool, dry place away from incompatibles. Keep container closed when not in use. Do not mix with any other chemicals. Store at temperatures below 30°C (86°F) and keep from freezing.
Disposal Procedures for Spills or Leaks: Wear protective equipment. Dike and contain large spills. Pump spills into an approved waste container. For small spills, soak up with a suitable absorbent such as clay, soil or commercially available absorbents, and then dispose of into an approved waste container. Keep away from sewers and out of natural waters.
Waste Disposal Method: Reuse if possible, or otherwise dispose recovered material in accordance with all local, Provincial or Federal Regulations.
Special Shipping Information: Store at temperatures below 30°C (86°F) and keep from freezing.

SECTION 8 – EMERGENCY FIRST AID PROCEDURES

First Aid:
 If swallowed, give plenty of clean water to drink to dilute product. Do not induce vomiting. Call a Physician. In case of contact with eyes, flush with clean water for 15 minutes. Get medical attention. For contact with skin, wash with clean water and rinse well. If irritation occurs or persists, get medical attention.

PREPARATION DATA

PREPARED BY: Technical Service / Regulatory Division PHONE: 604-526-5655 LAST UPDATE: 11/27/09
 THE INFORMATION PROVIDED IN THIS MATERIAL SAFETY DATA SHEET HAS BEEN OBTAINED FROM CURRENT SOURCES AND IS BELIEVED TO BE RELIABLE